THE
TRANSITION

A Retrospect of Gynæcology and Obstetrics

ARCHIBALD DONALD

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THE TRANSITION

(Being the Lloyd Roberts Lecture, St. Mary's Hospital, Manchester, 1923)

THE
TRANSITION

A RETROSPECT OF GYNÆCOLOGY AND OBSTETRICS

BY

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TO
MY COLLEAGUES OF ST. MARY'S HOSPITAL, MANCHESTER
—TO THOSE WHO ARE STILL LIVING AND
TO THE MEMORY OF THOSE WHO HAVE PASSED—
THIS ADDRESS IS
GRATEFULLY INSCRIBED

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THE TRANSITION.

A RETROSPECT OF GYNÆCOLOGY AND OBSTETRICS.

INTRODUCTORY.

BY his will the late Dr. Lloyd Roberts left two sums of money to found two lectureships in Manchester—one for the Royal Infirmary, and the other for St. Mary's Hospital. The opening lecture of the Royal Infirmary series was given by Dr. Adami, Vice-Chancellor of Liverpool University, and I have been honoured by an invitation from my colleagues of St. Mary's Hospital to give the first of the St. Mary's series.

While I am duly appreciative of the honour, and grateful to my colleagues, I think their choice may be in large measure due to the fact that I was associated as house surgeon and colleague with Dr. Roberts for nearly thirty-six years. It is for this reason that I felt I had to accept the invitation, although I know that there are many others much better equipped from other points of view for the task. My address is, therefore, not of a scientific nature; it is by way of an introduction to those which are to follow, a small contribution to the record of progress in obstetrics and gynæcology during thirty years, as reflected in local medical history. For the thirty years between 1880 and 1910 witnessed a transition of a wonderful kind. It was the most eventful period in surgical history since the beginning of knowledge, although this progress was mainly the result of the practical application of principles which had been established some years previously. For those who only know abdominal surgery as it exists to-day it must be difficult to realise the interest and excitement of these years of transition. One feels glad to have been alive in these days and to have taken a part, even a very small one, in solving the problems that so frequently presented themselves.

It may be thought that I should have extended the period to earlier years, so as to include the discovery of anæsthetics, ether and chloroform. But although the introduction of anæsthetics was an immense boon to the human race, it did little or nothing to lessen the death-rate or to allieviate suffering after the operation. On the contrary, it increased the number of operations, and in this way multiplied fatal cases.

DR. LLOYD ROBERTS.

For the early part of that period, and for twenty years before, Dr. Lloyd Roberts played a most important part in gynæcology in the north of England. In the operation of ovariotomy he alone kept the flag flying in Manchester.

Dr. Adami has given a vivid sketch of the founder of these lectures, but perhaps I may add a few words from my personal recollections. There is no doubt that he was a man of great personality. He was not by any means a commanding figure, but was endowed with an excellent constitution; he was short and sturdy in build, with muscular arms and strong hands. His head was of the rounded Celtic type, and he had rather piercing eyes overhung by bushy, black eyebrows. His lips were thin and compressed when in repose. For the last forty years of his life his dress was of the same cut—a short jacket of dark cloth with lighter trousers, and a silk hat, generally worn on the back of his head.

I have been at times puzzled to account for his success. He had few advantages to begin with, his people were comparatively poor, and I believe he was more or less self-educated. He never mentioned his own parents to me. I believe his mother died when he was very young—but he spoke with great respect of his stepmother, to whom he said he owed a great deal. He contributed practically nothing to the literature of his special subjects. He was not a good lecturer and did not shine as a clinical teacher, although his out-patients' room was often crowded by students. They were attracted more by his personality, by his knowledge of human nature, and by his humorous methods of dealing with large numbers of patients, than by his skill in diagnosis or his demonstration of cases. He was of a kindly disposition, and was at his best when dealing with patients from the Lancashire valleys. He enjoyed their quaint dialect, their bluntness and humour, and could answer them in their own style. He never played any games or took any interest in sport. He was not fond of walking, and during all the years that I knew him he never had a holiday in the country.

By temperament he was strongly conservative, with great reverence for the Church and State, for old institutions, and for the great masters in medicine. He was not a great reader, but his taste was always for the best in literature. It was owing to this faculty for choosing the best that his collections of water-colours, engravings, old silver and glass, and bookbindings were formed. He would have nothing but the best, and although, no doubt, his purchases were made on expert advice, still he had undeniable taste. His evenings were spent at home going over his collections or learning Italian from a tutor, or discussing literature with some old friend. There were several of these, each of whom had his regular evening for his visit.

In middle life his manner at times was rather blunt, and he was on occasions, like many men of strong character, inclined to be overbearing, but as he grew older his disposition mellowed and his personality became more attractive. In later life he inspired amongst those who knew him well not only liking but real affection. Latterly, and especially after his wife's death, he was rather lonely. He had no children, his only son having died during birth. His happiest times then, I think, were those that he spent at the meetings of the North of England Obstetrical Society, and these he enjoyed chiefly on account of their social character and for the dinner that followed each meeting.

The main elements in his success I believe to have been ambition, foresight, and self-confidence. While others who were on the staff with him were content to remain in general practice, with perhaps some little reputation as obstetricians, he decided, when comparatively young, to specialize. In spite of his early struggles he obtained his medical qualifications in 1857 at the age of twenty-two. In 1863, when he was twenty-eight years of age, we find that he was chosen by the Board of Management of St. Mary's Hospital to visit the hospitals of London and Paris, to gain information for the establishment of cancer wards in St. Mary's Hospital. For some twenty years he was associated in the work of the Hospital with Dr. Radford, who was well known at home and abroad for his writings, especially for his advocacy of ovariotomy and Cæsarean section, but, as far as is known, had not established a reputation as a surgeon. In his early years he must have come under the influence of Dr. Clay, who was a member of the surgical staff of St. Mary's Hospital in 1858, the year of Dr. Roberts' appointment as Surgeon-in-Ordinary to that institution. Charles Clay, who was born at Stockport, and lived and practised in Manchester, was one of the pioneers in abdominal surgery, and was recognized as the father of ovariotomy in Europe by many of his contemporaries. To him belongs the credit of having placed the operation on a sure foundation. In 1865, when Dr. Roberts was thirty years of age, Dr. Clay, who was no longer connected with St. Mary's Hospital, reported a series of 111 ovariotomies. There were several others on the surgical staff at this time, but from the year 1858 until the year 1874, Dr. Roberts had practically the whole of the abdominal work of St. Mary's Hospital in his hands. It is true that Mr. Whitehead, who afterwards was to make his name as one of the most brilliant of the Manchester surgeons, was attached to the Hospital for five years—from 1868 to 1873—but he performed very few abdominal operations. Dr. Thorburn, who was appointed to the newly-created post of Obstetric Physician to the Manchester Royal Infirmary in 1874, began to do abdominal work about that time; and Dr. Sinclair, who was in general practice up till 1875, joined the staff of the Southern Hospital in that year, and began to specialize in gynæcology. In 1874 Dr. Cullingworth was appointed to St. Mary's Hospital as Honorary Surgeon; Mr. Ewart was also appointed in the same year, and Dr. Walter in 1880. From 1874 abdominal operations became more frequent, but the great majority were performed by Dr. Roberts until 1881.

DR. CULLINGWORTH.

Dr. Cullingworth's name is one to be remembered, not only in connection with St. Mary's Hospital, but in the history of British gynæcology. He was born in Leeds, but came to Manchester as Resident to the Royal Infirmary in 1867, and then settled down in private practice. Of spare figure and slight physique, he was a tireless worker. He was a man of high principles, painstaking, precise and conscientious; a great helper of younger men. He developed into an able writer, and his contributions were characterized by clearness and carefulness of statement. He soon made his mark in Manchester, and, in addition to his appointment to St. Mary's Hospital he was Lecturer on Forensic Medicine to the University of Manchester. Later on he was appointed

Professor of Obstetrics. He was an excellent lecturer, as his subjects were always well arranged, and he had an agreeable and impressive delivery. He was a very good diagnostician, and he took pains to make an accurate diagnosis in every case. He attached great importance to physical examination, and especially to the bimanual method in pelvic cases. In these days it was remarkable how little stress was laid on this method, and how often, in consequence, the diagnosis was wrong. At that time great stress was laid on the use of the uterine sound, which was freely used as an aid to diagnosis in spite of the fact that on several occasions it was followed by an attack of pelvic peritonitis. Dr. Cullingworth discarded it in the out-patients' room. In 1888, at the age of forty-seven, he was invited to the post of Obstetric Physician to St. Thomas's Hospital, London, and after some hesitation accepted. During his last few years in Manchester he had begun to operate on cases of pelvic inflammation, and continued this work after he went to London. He was one of the pioneers of abdominal surgery for these inflammatory conditions. A further reference will be made to this point, but it may be mentioned here that it was his careful methods of examination which enabled him to diagnose these conditions, which were often overlooked by others.

St. Mary's Hospital in the Eighties.

It may be of interest to some if I describe the conditions under which obstetrics and gynæcology were carried on in St. Mary's Hospital in the eighties. From 1884 the account is given from personal knowledge.

The Hospital at that time was situated in Quay Street. It was a large, square building, consisting of two storeys, with a sort of addition or annexe on the roof. When one entered the front door one was admitted to a hall, lofty, pillared and imposing, and was faced by a short flight of stairs and a landing, with the doors of the Radford Library and the Radford Museum, and the entrance to the Lecture Hall; and on the left there was the out-patients' department. On a level with the Radford Museum and Library the stairs branched right and left to reach the first floor. Here were situated the bedrooms and sitting-rooms of the matron and resident surgeons, the nurses' dormitories and one ward of eight beds, and a small one with one bed. The other wards and operating theatre were situated on what I have called the annexe on the roof. This was approached by two flights of narrow wooden stairs, one at each end of the first floor landing. The corridor above, which gave entrance to the wards, ran round three sides of the square of the building, the centre of which was occupied by the leaded roof and skylights of the lecture theatre, library and museum. These wards looked like an afterthought on the part of the architect; but they must have been in the original design. Their situation had one great advantage: very free ventilation could be secured by opening doors and windows of the wards and the corridor windows. In the early days it was an advantage to be able to run out from the wards into the open air with the spray when the spirit flamed up and it looked as if the boiler might explode. The wards were small, each containing five or six beds, and even then were overcrowded. The operating theatre was merely a large room with floor covered with linoleum. There was a skylight in the roof, but no provision of artificial light for emergency operations after dark. There was only one washing-up sink.

The out-patients' department consisted of one large waiting-room, insufficiently lighted and badly ventilated, with doors which opened into three examination rooms. Even in these days there were large numbers of patients, many of whom came from outlying towns. There were only three members of the acting medical staff, and each one attended the out-patients on two mornings a week.

The bulk of the cases, which included cases of what are now known as chronic metritis, cervical hypertrophy, and erosion, were treated by medicine only. Every patient had her bottle of medicine. The favourite "bottle" was called Mist. Tonic, and was merely a weak infusion of quassia. Pessaries were freely used, not only for prolapse and retroversion, but also for anteflexion. Ferguson's speculum was employed in nearly every case, and the sound was used freely in combination with the speculum. A local application to the cervix was the rule, and intra-uterine medication was frequent. There were numerous little bottles containing iodine, carbolic acid, iodized phenol, and other solutions which were temporarily in fashion. The sound was dressed with cotton wool and dipped into one of the solutions. Out-patients' instruction was given every morning, and there were generally three or four students, sometimes a good many more, in attendance.

Even in these days there was what is now called an ante-natal clinic. When a maternity patient was given a recommendation she reported to the resident obstetric physician, who saw that her name was entered in the book kept for that purpose, and directed her to a midwife in her district. Her previous obstetric history was taken, and, if she was a primigravida or if there had been difficulty in a previous confinement, she was asked to wait or come again, so that her case might be investigated. The urine was tested in each case. When difficulty was anticipated in the confinement out-patients were admitted to the wards. These cases were rare at first, but the numbers gradually increased.

In the wards themselves the work was gradually settling down to purely gynæcological cases, although there were a fair number of operations for tumours of the breast and hæmorrhoids, and there continued to be operations in the children's department. All abdominal operations were performed in private wards, which were one-bedded wards in which the patient was put to bed after operation under the care of a special nurse. The minor gynæcological operations were somewhat limited in scope: there were a fair number of operations for lacerated perineum and fistulæ, and for the various forms of polypus and tumours and cysts of vagina and vulva. Emmett's operation on the cervix was just coming into vogue. Just before he retired in 1880, Mr. Ewart endeavoured to cure vaginal prolapse by a plastic operation. There is a record of four such cases. In the first two a raw surface was made on the anterior vaginal wall and the edges brought together. In the other two cases a similar operation was attempted on the posterior vaginal wall. In each of these last two cases the pouch of Douglas was opened, and as this was then regarded as a serious matter, the operations were abandoned. Cancer of the cervix was treated by scraping and the application of chloride of zinc. Hæmatoceles were not interfered with, and it was not uncommon to find two or three patients in one ward with blanched faces and with abdominal swellings reaching up to the umbilicus and bulging into the posterior fornix, waiting for the blood to absorb. There was no curetting, in the modern sense of the word.

The practice in St. Mary's Hospital was a fair index of what was going on in other centres at this time. In 1884 the chief interest still centred round ovariotomy. The reports of minor operations indicate that they were much on the same lines as those in St. Mary's Hospital.

The Era of Ovariotomy.

As ovariotomy was practically the only abdominal operation up till 1884, and was the forerunner of abdominal surgery of the present day, we may dwell for a little on some points in its history.

We have previously said that Charles Clay, in 1865, reported a series of 111 ovariotomies. Dr. Lloyd Roberts, in his address to the British Medical Association in August 1902, says that 78 of these recovered, which means a mortality of about 30 per cent., and also states that in 1880 Clay had performed 395 operations, with 101 deaths —a mortality of about 25 per cent. It is interesting to note how far we have progressed in the last eighty years, when we find that Dr. Clay operated on his first twenty-two cases without an anæsthetic, and that, when a patient's condition was not satisfactory during the first few days after operation, she was bled up to eighteen ounces or until she was sick.

It may be taken as a general rule that the mortality of ovariotomy between 1865 and 1880 was somewhere about 30 per cen , although Sir Spencer Wells in 1878 published a list of 900 cases, with a mortality of 25 per cent.; the last 100 cases having a mortality of 17 per cent. The best results in the country at this time were undoubtedly obtained by Thomas Keith, who had a mortality of 16 per cent. up to the year 1870. In an article in the *British Medcal Journal* in 1878 he writes that he wishes "to make his statement of results prominent, because year after year the authorities of the Samaritan Hospital proclaim in the largest of Roman letters that the results got there are always the best that have yet been obtained, the mortality of the Samaritan Hospital down to the end of 1876 being nearly one death in every four operated on." At that time Keith had a 10 per cent. mortality; results which were far better than any other and six times better than those of the German surgeons operating in the same year.

The mortality in St. Mary's Hospital between 1870 and 1880 ranged from 20 per cent. to 30 per cent., the great majority of the cases being operated on by Dr. Roberts. In most of these operations the pedicle of the tumour was treated by strangling it outside by a clamp or by a thick wire.

The tumours were nearly all of large size. Sometimes they were tapped and the patients were sent home with orders to return, in the hope that their condition would improve in the interval. By 1884 the clamp had disappeared. The pedicle was ligatured in two portions and dropped inside. Keith's glass drainage tube was always employed, and any serous effusion was drawn off with a glass syringe three or four times in the twenty-four hours. Convalescence was often interrupted by the formation of a hard swelling in one or other iliac regions. This was no doubt due to an inflammation of the broad ligament spreading from the pedicle. It has been described by Dr. Taylor, of Birmingham, as "the lost disease." After 1884 there was a gradual improvement in the results, but for a good many years after the general mortality was probably in the neighbourhood of 10 to 15 per cent. In the meantime, other abdominal operations were being performed.

Operative Treatment of Fibroids.

It is not necessary to trace the early history of operations for uterine fibroids, but we may note that the first case of removal by the abdomen of a fibroid uterus and ovaries was claimed by Dr. Charles Clay, who performed this operation in 1844. The operation of hysterectomy began to be seriously considered after ovariotomy had been well established. At first the method adopted was that of the clamp outside the abdomen on the lines of ovariotomy of that time, and in spite of the heavy mortality this was the plan followed for many years. In 1878, Spencer Wells published his first list of cases: 24 cases, with 15 deaths—a mortality of 62.5 per cent. Even in 1887, Keith put the mortality as 25 per cent., "though it is probably much higher," and says deliberately that "hysterectomy has done more harm than good."

In 1890, Lawson Tait described the terrible results which might follow when the ligatured pedicle was allowed to drop back into the peritoneal cavity. At a meeting of the British Gynæcological Society in 1892, "with an experience of many hundred cases," he solemnly asserted that, "in the absence of some great discovery of a kind not as yet even hinted at, the intra-peritoneal method was impossible for general adoption," and in 1894, Bantock still advocated the use of the clamp. Nevertheless, attempts were being made here and there during the years between 1885 and 1890 to remove fibroid uteri by intra-peritoneal ligature. Looking back, it seems curious that it took so long for the present methods to be reached.

There were two methods of dealing with fibroids which undoubtedly retarded the progress of hysterectomy :—

(1) *Removal of the uterine appendages.* This method was introduced by Tait in 1883, and for years after he was a keen advocate of this plan. The comparative safety of this operation led many operators to adopt it, and for the next six or seven years it was the favourite method, in spite of the fact that in many cases the after results were very disappointing.

(2) *The electric treatment.* In 1886 Dr. Apostoli, of Paris, introduced the treatment of fibroids by means of the constant current, and this method was taken up with extraordinary enthusiasm. Opinion was much influenced by a pronouncement by Dr. Keith, who stated that he had ceased to operate for fibroids, and that it was a crime to do so until electricity had first been given a trial. This was an astonishing statement, coming as it did from a man whose results had been so brilliant. It can only be explained on the ground that Keith, who did more than any man of his generation—apart from Lister—to improve the methods of abdominal surgery, was lacking in one element which goes to complete the real pioneer in practical surgery: he seems to have been of a highly sensitive temperament, and was never hardened to the

loss of life which was inevitable in the earlier days. Even when the risks had been diminished much beyond those which many others contemplated with calmness, the death of a patient seemed to weigh heavily upon his mind.

The reports of the success of the Apostoli treatment were at first extraordinarily favourable, and Apostoli himself claimed that he had treated 403 cases, with two deaths; to have effectively checked hæmorrhage; and to have obtained 95 per cent. of permanent benefit. Medical men flocked to Paris from all parts of Europe and America. In most of the consulting rooms of the gynæcological specialists an Apostoli apparatus was installed, and for a time surgical measures were suspended. And then the reaction set in. Accounts of failure began to circulate: fatal cases from salpingitis, pyosalpinx, and pelvic abscess. Many of these undoubtedly were due to wrong diagnosis. In 1890, Tait wrote, in reply to a letter from the younger Keith, that no one now believed in the electrical treatment of fibroids. The phase vanished as rapidly as it came in. I am inclined to think that at the present time history is repeating itself, if we substitute X-rays and radium for electricity in the treatment of fibroids.

About this time *vaginal hysterectomy* was beginning to make its way in cases of cancer of the cervix—and as it solved the difficulty in the treatment of the uterine stump it was adopted for cases of uterine fibroid. The first case was reported by Pean in 1886. For small tumours it answered very well, and even moderately large tumours were removed by a process of "morcellement." But in these cases the objection arose that it was a "blind" operation. To meet this difficulty the combined operation was introduced: the broad ligaments were tied through the abdomen as far as the isthmus of the uterus, and the operation was then completed by the vagina. The operation of vaginal hysterectomy for anything but quite small tumours is now abandoned, but it helped at the time to show that ligature of the arteries supplying the uterus was the line for further practice. It is probable that the problem of the cervical stump was also the original reason for the operation for panhysterectomy, which was introduced as the operation of choice by Doyen in 1892. About this time successful cases of myomectomy—or removal of the tumour only by enucleation from its uterine bed—were reported. In the purely abdominal hysterectomy various compromises were tried before the present method was reached. The broad ligaments were tied from above as far as the uterine arteries, but the lower branches of these were not secured; the cervix was constricted by a rubber band ("the sunk elastic ligature") or transfixed by silk which was then tied round each half of the cervix, and the tumour then cut away. The present method was really settled by the careful descriptions published by Chrobak in 1890 in Germany, and by Baer in 1891 in America.

We may now glance at the practice of St. Mary's Hospital during the period which we have just discussed. Up to 1884 abdominal operations for fibroid were few and far between; an occasional hysterectomy by the clamp is recorded, but the operation was only undertaken in cases of very large tumours, and the mortality was very high. There were quite a number of cases, however, in which submucous fibroid growths were operated on by the vagina. If the growth was pedunculated it was pulled down and the pedicle was divided. In other cases if the cervix was dilated, the capsule of the tumour was incised. In most cases this was followed by partial, or complete, extrusion of the tumour through the cervix. In some cases several operations were required, the tumour being reduced at each operation, until finally the pedicle could be divided or the tumour enucleated from its bed. In 1884 removal of the uterine appendages was begun, and for several years afterwards this was the general procedure, but the operations were comparatively few. Hysterectomy by the clamp was still occasionally done, but it was not an operation much in favour. In 1891 there were some cases of abdominal myomectomy; in 1892 vaginal hysterectomy for fibroid was performed, the first case of vaginal hysterectomy for cancer of the cervix having been done in 1889. In 1892 there was a case of total hysterectomy by the combined abdominal and vaginal method, and the method by the sunk elastic ligature was tried. In 1893, the first intraperitoneal hysterectomy by means of ligature was performed, the technique being practically the same as is followed at the present day, and from that date it was the only operation for removal of the uterus by the abdomen except in cases where it seemed advisable to remove the cervix as well as the body. I find no records of operation by the clamp after 1891. After 1893 there are still records of the combined operation, but abdominal panhysterectomy was beginning to displace it.

OPERATIONS FOR CONDITIONS CLASSIFIED AS PELVIC PERITONITIS.

It was a natural sequence of the greater frequency of abdominal operations for ovarian tumours that other conditions in the pelvis were discovered for which surgical measures were employed. This was notably the case in inflammatory conditions of the tubes and ovaries and in effusions of blood in the tubes and pouch of Douglas. It was in this work that Dr. Cullingworth took a prominent part. After he had been in London for about four years he published the results of 50 cases in a paper read at the Obstetrical Society of London in 1892. Unfortunately at that time the men who took the most prominent part in the Obstetrical Society were more interested in obstetrics and held somewhat rigid views in gynæcology. Their influence was undoubtedly to keep abdominal surgery back. Their prestige was such that none of the bolder spirits could adventure on hitherto unexplored fields of surgery without incurring their opposition. Operations on large ovarian tumours were permitted—and that only after a struggle—but women were allowed to go on suffering from fibroid tumours, from pyosalpinx, from hæmatocele and from other pelvic conditions which were then unrecognised. The leaders held the comfortable opinion that no one died from these troubles. If they had followed the cases up they would have found that many deaths from cardiac trouble were really due to prolonged hæmorrhage from a uterine fibroid or a hæmatocele, and that gradual exhaustion with other complications was the termination of many cases of suppuration in the tubes and ovaries. Even amongst the patients who eventually recovered there must have been an enormous amount of suffering and misery and chronic invalidism. In addition to Cullingworth, whom we may claim for Manchester, Lawson Tait in Birmingham and Mayo Robson in Leeds were extending the field of abdominal surgery. Cullingworth's paper raised a storm of opposition and protest. It was said by one of the leaders that " death from pyosalpinx or hæmatocele was a rare event " ; " that operations for these conditions were unjustifiable " ; " that the mortality of the operation for pyosalpinx was several hundred times greater than that of the disease : the only reasonable plan for pelvic abscess was to drain." The operation for tubercular Fallopian tubes was also condemned. Nearly all the speakers joined in more or less extreme opposition to Dr. Cullingworth's views, and some of them hoped that " it would not go forth from the Obstetrical Society that his propositions were commended by all." " Dr. Cullingworh's surgical zeal carried him far beyond surgical principles." " His axioms would lead to much rash, hazardous and frequently unnecessary interference." In spite of this chorus of disapproval, Dr. Cullingworth held to his views and his practice, and in the course of a few years the surgical methods which he advocated were established on a firm basis. But he felt very keenly the harsh criticisms and hostile attitude of the leaders of the Obstetrical Society.

Dr. Cullingworth's first six operations for inflamed tubes and ovaries took place in St. Mary's Hospital, and at that time Dr. Lloyd Roberts and Dr. Walter were also operating for these conditions; and from 1889 cases of pyosalpinx begin to appear with increasing frequency in the hospital registers.

It is not necessary to trace the history of other operations. From 1890 onwards their number and scope steadily increased, and the results have been progressively better up to the present time, when the limits of surgical intervention seem to have been almost reached.

Minor Gynæcology.

In minor gynæcological operations there are no such striking triumphs to be recorded, but there has been great progress, resulting in the relief of many chronic ailments of a disabling character. In contrasting the present day with former times, we notice especially the great number of cases of curetting for glandular hypertrophy of the endometrium and of cases of plastic operations for prolapse. It is in these operations that the practice in St. Mary's Hospital has shown distinctive features as compared with that in other centres of gynæcology.

Obstetrics.

So far we have been dealing with gynæcology, but as St. Mary's Hospital has always had a large maternity department it is necessary to refer to that work. We are bound to confess that progress in obstetrics, as far as practical results in the country at large are concerned, has been very limited. The one great advance has been in the Cæsarean operation, and this really comes as a result of improvements in gynæcology. All the rest is much as it was nearly forty years ago. There was a steady and striking improvement in puerperal mortality in hospital, but this has not been reflected in private practice, and one has to admit that the results are very far from what they ought to be. This point will be referred to under another heading. Of recent years attention has been directed to the importance of a careful examination of patients in the last two or three months of pregnancy—the so-called ante-natal treatment. This is not a new departure, but the work has now been better organised and has already proved of considerable value.

SIR WILLIAM SINCLAIR.

I cannot conclude this review of the work done in Manchester without a reference to the late Sir William Sinclair. I have mentioned that he joined the staff of the Southern Hospital in 1875, but for many years afterwards he had a busy general practice. It was only when he succeeded Dr. Cullingworth as professor of obstetrics in 1887 that Dr. Sinclair, as he was then, devoted himself entirely to special work. He joined the staff of St. Mary's Hospital in 1904 when the two hospitals were amalgamated. In the early nineties he travelled a good deal and visited many of the German clinics in order to gain experience, and he put into practice the methods that he had learned abroad. He soon became widely known as a brilliant writer and as an indefatigable worker. I am personally indebted to him, as it was from watching him that I learnt the general principles underlying the operations of vaginal hysterectomy and intraperitoneal hysterectomy, although his methods were overlaid with many details, some of which were unnecessary and some even harmful. I have always thought it was a pity that he did not in his earlier days serve an apprenticeship as a house surgeon, and thus acquire a more practical experience of operative work. It was only because of his great force of character and intellectual qualities that he was able to emerge from a large general practice and become a leader in gynæcology; but he never quite made up for the want of early intensive training in operative surgery. He was known as a man of strong personality and of many interests. His name ought to be remembered if only for two things: he founded the North of England Obstetrical and Gynæcological Society, and he was the originator of the *Journal of Obstetrics and Gynæcology of the British Empire.* I can remember the origins of these enterprises, as they both sprang out of his active brain in the course of conversations at his house in the late hours of the night. The North of England Society has been of the greatest value to gynæcologists in Lancashire and Yorkshire, and the *British Empire Journal* has already more than justified its existence, and I hope in the future will come to be more widely recognised as one of the most important journals of its kind in the world.

Dr. Walls.

I should like here to pay a tribute to my friend the late Dr. W. Kay Walls, whose loss at a comparatively early age we had to deplore. Dr. Walls was a brilliant operator and a wise counsellor. Before his appointment as Surgeon to St. Mary's Hospital he was Resident Surgical Officer for a period of seven years, and I think every one of the staff was indebted to him for his loyal co-operation and helpful suggestions.

THE TRANSITION.

In order to illustrate by figures the extraordinary change that has occurred in the last forty years let us take the records contained in the operation registers of St. Mary's Hospital in the early and in the late years. In 1880 we find a total of 68 operations of all kinds. Of these, 17 were abdominal (15 ovariotomies, one operation for extra-uterine pregnancy, and one hysterectomy for fibroid). Of these, two were fatal—one ovariotomy and the hysterectomy—giving a mortality of 11 per cent., or if we take ovarotomies alone, of 6.6 per cent. As these numbers are small, we may take the following year (1881). Here we find a total of 98 operations, of which 16 were abdominal cases—all ovariotomies, with four deaths—a mortality of 25 per cent. If we add these two years together, we have 31 ovariotomies, with five deaths—a mortality of 16 per cent. In the list of operations in 1922 we find that there were distributed amongst six surgeons 604 abdominal operations, with 22 deaths—a mortality of 3.6 per cent. A considerable number of the fatalities occurred in rather desperate cases; for example, there were four deaths in 129 cases of ovariotomy, or 3.1 per cent.; but in one case there was a large suppurating cyst, in two cases the tumours were malignant, and in the fourth case the operation was undertaken for a large tumour in a patient aged 70, who died of gangrene of the leg.

The details that I have just given show in a concrete form the enormous advances made in abdominal surgery. In an earlier part of the period an abdominal operation was undertaken, even in the easiest cases, with considerable anxiety, and was regarded by some as quite unjustifiable except when the patient's life was already threatened. Too often the signs of grave danger appeared within the first few days following the operation. The death in the large majority of cases was due to septic peritonitis. Those of us who looked after these cases in those days can still recall the clinical picture: the pinching of the face which came on so suddenly; the quickening of the pulse; the vomiting of clear fluid, which became bilious and then "coffee-ground"; the distension of the abdomen as a result of paresis of the whole intestinal tract; and death on the fifth or sixth day. The modern surgeon has fortunately little conception of the nerve-racking anxieties which his predecessors had to undergo. Now everything is changed; an abdominal operation is now regarded, save in exceptional cases, as a matter which gives little cause for anxiety. In ordinary "clean" operations the patient is practically well within forty-eight hours, and operations are advised for conditions which do not threaten life and may even only cause inconvenience and a certain disability for work.

Causes of Improvement.

When we come to inquire into the underlying reasons for the great changes that have occurred there can be no hesitation in saying that it is fundamentally due to the work of Lister. It is quite true that Lister complicated the problem by his own particular method, and that it required time before the practical applications of his central idea were definitely worked out and adopted.

As we all know, the beginning was made by Pasteur, who showed that the putrefaction of wounds was due to germs, and who announced in 1862 that there was no such thing as spontaneous generation. It was to Lister that we owe the application of this discovery to the practice of surgery. His first aim was to surround the wound with air which contained no germs, and to kill any germs which might have access to the wounds in spite of his precautions. Hence arose the carbolic spray and the carbolic solutions and the carbolic dressings, and all the details which go to make up the method which is known by his name. This method was not quite suitable for operations in the peritoneal cavity, and Lister himself advised Keith not to use it; but in the end Keith decided to take up Listerism, and, in Lister's words, "On at length adopting strict antiseptic measures, with an improved spray, he for a while surpassed himself by an unbroken series of 80 successful cases. Yet, wonderful as this experience was, it was only a difference in degree from his former experiences and assuredly no absolute proof of superiority of the new means employed."

Keith afterwards abandoned the spray, but continued to use other antiseptic precautions. He gave it up not because he had any cases of carbolic poisoning amongst his patients, but because it nearly poisoned himself. It may be asked what Keith's previous methods were that were attended by such good results. They were characterised by great attention to detail: a large incision giving free exposure of the abdominal cavity, which was cleansed most thoroughly (he thought half an hour was not wasted): every oozing point was secured; the pedicle was cauterized; when ligatures were used they were either of soft iron wire or of catgut—never of silk. He used carbolic very freely before the operation. All his instruments were covered with carbolic oil, and all his sponges were boiled before use. In opposition to Lister's methods, Tait preached the gospel of cleanliness, but when we read an account of his procedure, it is evident that it did not involve cleanliness in the surgical sense of the word. In his description of operations he never mentions the use of lotion for his hands or for the preparation of the patient's skin, or of the disinfecting of instruments. Only in reference to the use of sponges does he refer to the use of carbolic acid, as these were kept for a week in one in twenty carbolic lotion. A light is thrown on the state of ignorance of the cause of sepsis in these days by an instance which he relates in his book. A bystander, who, hearing him ask for a small sponge during an operation, tore one in two without being discovered. The extra piece of sponge was removed from the abdomen four days after, and Tait remarks that the horror of the circumstance is still vividly in his mind—not, apparently, because a casual visitor handled his sponges, but because he had interfered with the counting of them.

In St. Mary's Hospital the spray had been used before 1884, but was then given up by Dr. Roberts and Dr. Walter, but continued by Dr. Cullingworth for another year. At this time carbolic lotion was used for the hands and instruments and sponges. In 1886 corrosive sublimate lotion was used for the hands and soon displaced carbolic acid for this purpose. From this year onwards results steadily improved. The care of the hands before operation was considered to be most important. It began to be suspected that germs of septic infection were mostly conveyed to the patient by the operator's fingers, his instruments and ligatures. Disinfection of the hands by a saturated solution of permanganate of potash, followed by a similar solution of oxalic acid was introduced about 1891. More careful attention was given to the disinfection of instruments and ligatures, and gas sterilizers were installed. Sponges were discarded and sterilized swabs took their place. By degrees the elaborate aseptic ritual, as we know it to-day, was reached.

It may be noted that good results as regards mortality percentage were being obtained, even before sleeves, masks and gloves were introduced; but I think the convalescence has been more rapid and less disturbed since gloves were worn. It may be a coincidence, but I have not seen in my own practice in hospital or my own nursing home a single case of thrombosis or embolism after operation in a "clean" case since I took to gloves, even when the patient has been profoundly anæmic as the result of prolonged and profuse bleeding. This was the last great anxiety in operations in very anæmic subjects. One must not forget that gloves may be abused. I fear they are sometimes made the excuse for a rapid and perfunctory disinfection of the hands. A conscientious disinfection of the hands is good; with the addition of gloves it is better; but gloves without careful disinfection are a danger.

With the last steps in asepsis, septic peritonitis has been banished from abdominal surgery, except in cases where the germs of infection have already existed in the patient's system. An injury to intestine may cause a violent peritonitis, or an escape of pus from a tube or ovary; but deaths from these causes are very rare.

Asepsis in Obstetric Practice.

(1) *In Hospital.*

The same methods that were employed in gynæcology were adopted in the Hospital maternity wards, with the same results. Puerperal sepsis in normal cases was abolished. The records are now judged not by the percentage mortality but by morbidity; that is, by a study of the records of pulse and temperature in the puerperal period. The patient in hospital is under the most favourable conditions for the application of the aseptic theory. There are plenty of nurses, and one or more of these can always have sterilized hands and need not afterwards come in contact with unsterilized objects. The confinement is conducted on the same lines as an operation.

(2) *In Private Cases.*

It is still a reproach to us all that deaths from puerperal sepsis are still not uncommon. I think that what might be called the fulminating type of puerperal fever is now rare—the cases in which the patient dies within a week or ten days of a virulent septic peritonitis. Another noticeable thing is the almost total disappearance of cases of puerperal cellulitis in which the patient lies on her back with one thigh flexed on the abdomen as the result of a hard mass above Poupart's ligament. Such a condition was very common about the eighties, but we may now almost call it a lost disease. But the mortality rate of puerperal sepsis has remained more or less stationary for the last twenty years, and has even shown an increase in recent years. In the Registrar-General's report for 1920 we find the statement that " the mortality from puerperal septic diseases suddenly rose in 1919 from almost the lowest to the highest level reached since 1905." Twenty-nine cases per 10,000 were notified in England and Wales, and of these more than half died. This heavy mortality can only be explained on the ground that only the more severe cases were reported. This means that there were many cases of sepsis whch did not terminate fatally, but which must have left behind them a great amount of chronic invalidism. One has to admit that in private practice there are many difficulties. The hospital method is the ideal method, but it is impossible to carry the full aseptic ritual into the houses of the poor, with a midwife alone in attendance; or even into the houses of the middle classes, with a doctor and one nurse. There are some who think that the only hope of improvement is to adapt the rigid hospital methods to private practice. I agree that it would be of great benefit if every case of labour could be conducted in a maternity hospital or similar institution, and the extension of the maternity home system, under suitable supervision, is very desirable; but any great development on these lines seems at present unattainable in this country. But a great deal more could be done to secure the real essentials of asepsis than is done at present. The surgical cleanliness of the hands of the doctor and midwife, of the patient's skin, and of all instruments, swabs and sutures can quite well be secured, but are too often neglected. If we look back to the historical sketch, we find that a great improvement in the results of abdominal operations followed the introduction of perchloride and biniodide of mercury. From 1884 to 1886 these became the routine lotions in British maternity hospitals. A bowl of the lotion, of the strength of 1 in 2,000, was always kept by the patient's bedside. The nurse and doctor steeped their hands in it, the patient's skin was swabbed with it. At the beginning of labour and before every examination the soaking of the hands and the swabbing of the patient were repeated. Unfortunately, the practice was introduced of using a weaker solution for vaginal douching after labour, which at that time was thought to be necessary in every case. That was a blunder which caused a regrettable reaction. Some patients died from mercurial poisoning, and obstetricians were alarmed. It was then thought that the solutions were too dangerous to be trusted to midwives and nurses, and from that time there seems to have been a growing tendency in private practice to give up the habitual use of mercurial lotions. Their place seems to have been taken by various coal-tar products. These have the advantage of being non-poisonous; but. in my opinion, they are less effective, except in a strength which irritates and roughens the skin. It is a common practice among nurses to pour a teaspoonful of one of these lotions into the ordinary wash-hand basin and then to fill it up halfway with hot water. Some twelve or eighteen months ago it happened that I was asked, within a period of two or three months, to see five cases of puerperal infection. In each case I asked the nurse for an antiseptic to cleanse my hands, and on every occasion a bottle of one of the coal-tar products I have mentioned was brought out and a dilute solution prepared in the manner I have mentioned. The doctor in attendance always had some mercurial tablets in his bag, which was sometimes in his car outside; but the nurse had none.

In my opinion, the sooner we get back to the mercurial solutions the better for the patients. The fault lies largely in the teaching and training, but I think the central authority might exercise its influence in these matters. It seems obvious that if the present day nurse or midwife is not encouraged to use perchloride or biniodide of mercury for her hands and for the patient's skin, she ought not to be allowed to practise.

There are further precautions which may be reasonably recommended. It is undoubtedly an advantage for both doctor and nurse to wear sterilized overalls, to have a sterilized sheet of Gamgee tissue for the patient, and a supply of sterilized towels. In the case of operative interference, all instruments and some ligatures can be sterilized by boiling in a kettle or pan. Aseptic catgut ligatures can be obtained in sealed tubes. All these things can be provided without any great fuss or preparation. A debatable point is as to the use of rubber gloves. My opinion is that gloves are not advisable. It is almost impossible to use them as they should be used in the conditions that exist in the houses of the poorer patients. I have good reasons for believing that what actually happens is that in the accumulation of detail a nurse or doctor often neglects the essentials. Many of the gloves used are leaky—towards the end of the confinement if not at the beginning. The ordinary glove is not proof against repeated boiling, and a new pair of gloves for each case is a serious matter for anyone with a large maternity practice amongst the poor. Then there is a danger in the use of gloves to which I have already alluded—a sense of security that leads to a scamping of the thorough disinfection of the hands. When intra-uterine manipulation has to be undertaken and where sufficient assistance can be obtained that is another matter; but, apart from these cases, I am sure it is best for the nurse and doctor to pin their faith to the conscientious use of the mercurial lotions.

TECHNIQUE.

The thorough adoption of aseptic precautions was the great factor in the transiton we have been tracing, but the improvement in the technique of operations undoubtedly played a part, although a much less important one. Without asepsis, technique could have achieved little; with asepsis, a technique that is not good may pass muster. A man who pays great attention to surgical cleanliness may operate in a clumsy way and yet obtain a reasonably good result; but if, in addition to the usual precautions in asepsis, the operation is performed neatly, the best result will be obtained. We have seen in the history of operations for fibroids how the want of appreciation of the proper methods in hysterectomy kept progress back. Lawson Tait, to whom abdominal surgery owes much, was obsessed for many years by the conviction that the clumsy clamp method was the only safe way of treating the uterine stump. I have quoted his remarks in support of the clamp in 1892, when he was waiting for "a great discovery." Two years previously he said, in a discussion at the Medical Society, that "the uterine stump from which a myoma has been removed is unlike anything else in the human body known to me. It is as hard as cartilage, as brittle as cheese, so that the ligature will cut through it, or it is so completely infiltrated with serum that the tightened ligature will be quite loose in a few hours. The best instrument is Koeberle's serre-noeud, and it is ridiculous to call this procedure barbarous." This was at a time when the present method of tying the arteries before they reached the cervix was being generally established.

There are many other instances in which improvement of technique has rendered an operation less dangerous and the risk of later complications less. The introduction of the Trendelenberg position was a great advance in pelvic surgery. The enucleation of a fibroid before removal may convert what would otherwise be a difficult operation into an easy one. The same remark applies to the incision and stripping of the peritoneal covering of an intra-ligamentous cyst. The method of isolating the ureters and pulling them away from the immediate zone of operations renders radical removal of the uterus for cancer more thorough and more safe. The stitching of the abdominal wall in layers undoubtedly lessens the risk of hernia. Perhaps I am treading on more dangerous ground when I say that the almost complete displacement of silk by catgut in abdominal operations has been an immense improvement.

In spite of all advances there still remains what seems to be an irreducible minimum of mortality. The surgeon who picks his cases and refuses to operate when the risk is great, even although the operation is the only chance for his patient, will have, other things being equal, a better record than his more adventurous colleague. The chief dangers which still exist are in operations for malignant growths, where the resistance of the patient may be greatly diminished and where there is increased risk of injury to intestines or other important organs. A case may be lost from hæmorrhage now and again, even where the greatest care has been taken; a small vessel which seemed to be securely tied may slip from its ligature. Even these cases should be saved if they are under skilled supervision and if the nature of the emergency is diagnosed, but the lack of observation by the attendant, or distance from skilled help, may be fatal. If a patient has cardiac trouble, or bronchitis, or renal disease, the risks are much increased. Deaths from pneumonia may have a septic origin, but acute bronchitis or catarrhal pneumonia may be caused by the exposure of a patient during or just after an operation. In considering all these unfavourable conditions I think we may place the irreducible mortality of a gynæcological surgeon attached to a special hospital, or to the special department of a large hospital, who is operating on a large number of what may be called assorted abdominal cases, at something between 1 and 3 per cent.—the smaller percentage being that of the man who is cautious, and the larger that of the man who is willing to operate in cases that are otherwise bound to die.

PATHOLOGY.

It hardly comes within the scope of this brief history to mention the changes that have occurred in our views of gynæcological pathology. We may remark, however, that in these forty years we have seen the abandonment of many more or less fantastic views of uterine and ovarian disease, and the bringing of the pathology of these organs more into line with that of other organs. A good many of the diseases ending in "itis" are now regarded as not being of inflammatory region. But we have not yet quite got rid of the mechanical theory of uterine diseases, and there are still many problems waiting for solution.

THE DEBT OF THE GENERAL SURGEON TO THE GYNÆCOLOGIST.

In the present time I think most surgeons are unaware of or forget that the pioneers of abdominal surgery were gynæcologists. Sir Rickman Godlee, in his life of Lord Lister, says that "although Wells and Keith were performing ovariotomy frequently and with increasing success, abdominal surgery was hardly thought of." Keith had been house surgeon to Syme, in Edinburgh, one of the most daring and successful surgeons of his day; but when Keith began to operate on ovarian cysts it is recorded that Syme remarked that "fellows like you should be handed over to the Public Prosecutor." Even in the eighties the general surgeon rarely opened the abdomen except in cases of strangulated hernia or for the performance of colotomy. I can remember in the early nineties being told by an active member of the surgical staff of the Manchester Royal Infirmary that I was fortunate in having to deal with abdominal cases in women only, as the male abdomen was much more sensitive to surgical measures. This, I believe, was an opinion held by surgeons at that time. Operations for inflamed appendix did not become common until early in the present century, about 1900—1904. Five years before the earlier of these dates the removal of inflamed and suppurating tubes and ovaries was a common operation amongst gynæcologists. I think the explanation of this is that the gynæcologists grasped the importance of aseptic measures at an earlier date than the general surgeon. In 1883, the President of the Obstetrical Society of London (Dr. Gervis) quotes Erichsen as saying "and surgeons are more indebted to obstetricians for other" (*i.e.*, apart from ovariotomy) "great improvements in operative surgery, for it is to them we owe the great precautions which, independently of antiseptics or Listerian methods, have tended to lower the mortality of ordinary surgical cases." Lister himself stated that "Spencer Wells and Keith had achieved results which astonished the world before strict antiseptic treatment was thought of." These results were largely due to cleanliness. It is only fair to add that they had less occasion to deal with highly infected cases, and, further, that they were dealing with the abdominal cavity in which antiseptics could not be used without the risk of poisoning the patient. For this reason they were obliged to take all the more care to prevent the entrance of germs into the wound.

ST. MARY'S HOSPITAL, MANCHESTER.

The part that Manchester has played as a centre of Obstetrics and Gynæcology is not so well recognised as it should be. The citizens of Manchester and those who live in neighbouring districts have generally little idea of the amount that the city has contributed to the advance of these subjects in particular, and as a consequence to abdominal surgery generally. Vice-Chancellor Adami has ably reviewed these contributions in his Lloyd Roberts Lecture on Charles White. It is further to be noted that all the important work done in Manchester was by men who were on the staff of St. Mary's Hospital. The names of Charles White, John Hull, Thomas Radford, Kinder Wood, Charles Clay, Lloyd Roberts, Charles Cullingworth and William Sinclair are all associated with advances in Obstetrics and Gynæcology.

It is now one hundred and thirty-three years since the Hospital was founded. It was first known as the "Lying-in Charity." It is noted that in the years 1793 and 1794 (three and four years after the hospital was opened) 204 women were delivered in the Hospital, and that one of the class of cases suitable for admission was the patient in whom difficulty in the confinement was to be expected (see Dr. Bride's history of the Hospital). It is therefore indisputable that St. Mary's Hospital was founded as a Maternity Hospital, and was one of the oldest of its kind in the country. The statement is made in the Hospital Report for 1855 (probably written by Dr. Radford), "that besides lectures to medical students and midwives, this Hospital was the first, as far as is known, to make arrangements for the systematic instruction of nurses."

With a record of such good work done in the past and of such activity in the present it is surely not too much to hope that in future the benevolent and scientific work of the Hospital will never be hampered by lack of support.